



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,990	03/12/2004	Wynn Peter Holloway	P451	8785

7590 06/23/2006

PAUL E. MILLIKEN
9061 WALL STREET, NW
MASSILLON, OH 44646-1676

EXAMINER

CAJILIG, CHRISTINE T

ART UNIT	PAPER NUMBER
----------	--------------

3637

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N . 10/799,990	Applicant(s) HOLLOWAY, WYNN PETER	
	Examiner Christine T. Cajilig	Art Unit 3637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been received for foreign priority document, Application No. GB 0306408.6, filed on March 20, 2003.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the corrugations in the different layer of the core all run in the same direction as in claim 7, the corrugations in adjacent layers of the core are normal to each other as in claim 8, the corrugations in

one layer are smaller in dimensions than the corrugations in an adjacent layer as in claim 9, the wood grain in the outer veneer of the plywood flanges extends longitudinally of the beam as in claim 10, the transverse width of the cavity as in claim 11 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "43" and "30" have both been used to designate a recess, and "16" and "116" have both been used to designate an external board.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to

the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "16" has been used to designate both the external board and central groove and the reference character "17" has been used to designate both the core and the internal boards. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the

Art Unit: 3637

description: 14, 24, 104, and 42. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

9. The abstract of the disclosure is objected to because of the use of the word "comprising". Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

10. The attempt to incorporate subject matter into this application by reference to GB-A-2391 027 in Page 1-Line 20, Page 4-Line 20, and Page 10-Line 4 is ineffective because *the root words "incorporate" and/or "reference" have been omitted, See 37 CFR 1.57(b)(1); the reference document is not clearly identified as required by 37 CFR 1.57(b)(2)).*

The incorporation by reference will not be effective until correction is made to comply with 37 CFR 1.57(b), (c), or (d). If the incorporated material is relied upon to meet any outstanding objection, rejection, or other requirement imposed by the Office, the correction must be made within any time period set by the Office for responding to the objection, rejection, or other requirement for the incorporation to be effective. Compliance will not be held in abeyance with respect to responding to the objection, rejection, or other requirement for the incorporation to be effective. In no case may the correction be made later than the close of prosecution as defined in 37 CFR 1.114(b), or abandonment of the application, whichever occurs earlier.

Any correction inserting material by amendment that was previously incorporated by reference must be accompanied by a statement that the material being inserted is the material incorporated by reference and the amendment contains no new matter. 37 CFR 1.57(f).

11. The disclosure is objected to because of the following informalities: "beans" on page 1, line 20 is misspelled; "Composite" on page 2, line 8 is capitalized mid-sentence; missing parentheses at the end of page 4, line 10; "awidth" is misspelled on page 6, line 3; page 8, lines 6-8 contains a run-on sentence.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 3, 9, 10, 11, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Claim 3 recites the limitation "the supporting web" and "its" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim.

15. Regarding claim 9, the term "may be" in claim 9 is a relative term which renders the claim indefinite. The term "smaller" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

16. Claim 10 recites the limitation "the wood grain" and "the outer veneer" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

17. Claim 11 recites the limitation "the transverse width" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

18. Regarding claim 11, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by

the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 11 recites the broad recitation 20-35%, and the claim also recites 25-35%, which is the narrower statement of the range/limitation.

19. Claim 14 recites the limitation "the outer beams" in lines 3-4 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 1-8, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambuth (U.S. Patent No. 4,413,459) in view of Grigsby et al. (U.S. Patent No. 5,681,641).

22. Regarding claim 1, Lambuth in Figure 4 discloses a wooden composite I-beam (80) comprising a central cavity (a) surrounded by wood or wood derivative walls (82,84).

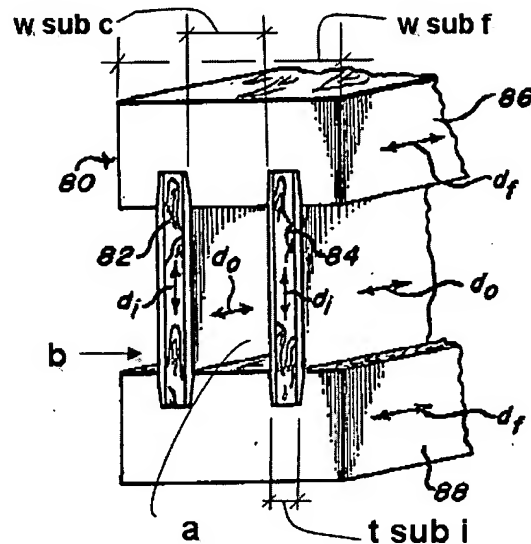
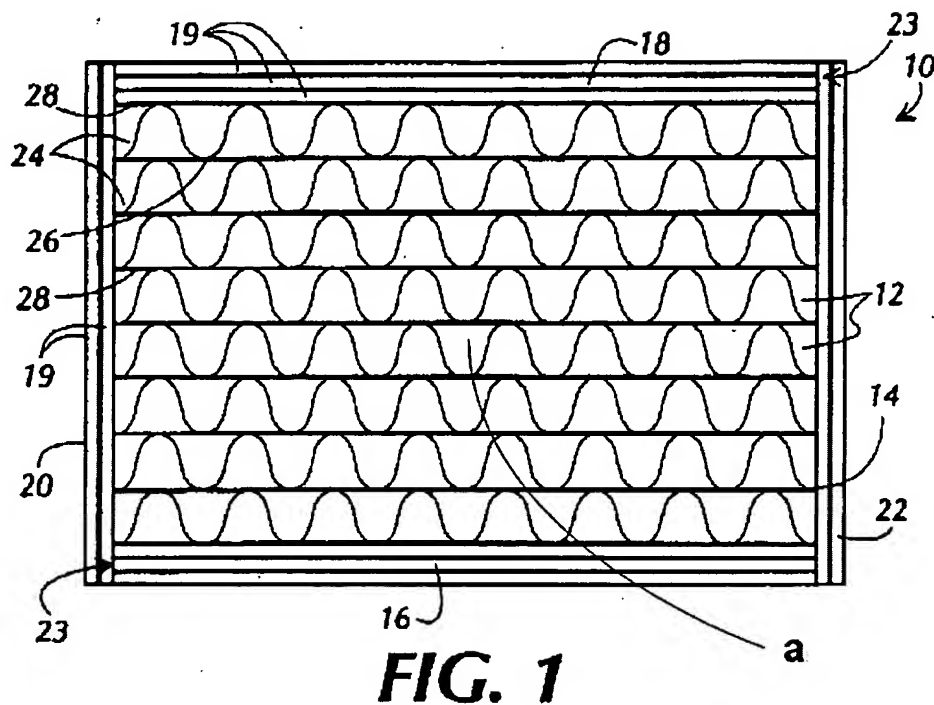


Fig. 4

Lambuth (U.S. Patent No. 4,413,459)

23. Lambuth does not disclose a central cavity filled with a core of corrugated paper or corrugated cardboard, the core being adhered to the surrounding walls. However, Grigsby et al. in Figure 1 teaches a structural member having a central cavity comprising a core (a) of corrugated paper or corrugated cardboard (12), the core being adhered to the surrounding walls (16,18), (Col 6, Ln 22-24).



Grigsby et al. (U.S. Patent No. 5,681,641)

24. Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the applicant's invention to modify the wooden composite beam of Lambuth to include a core of corrugated paper or corrugated cardboard, the core being adhered to the surrounding walls to provide further stiffness for the member using light-weight material as taught by Grigsby (Col 6, Ln 37-50).

25. Regarding claim 2, Lambuth in Figure 4 discloses a wooden composite I-beam (80) comprising:

- a. upper and lower plywood (Col 6, Ln 3-6) flanges (86,88)

Art Unit: 3637

- b. interconnected by a web (b) comprising a pair of spaced apart planar side walls (82,84) formed from wood or wood derivative material (Col 2, Ln 41-42)
- c. the cavity (a) being formed within the web

26. Regarding claim 3, Lambuth in Figure 4 discloses a wooden composite I-beam (80) comprising each plywood flange (86,88) that extends beyond the supporting web (b) on each side thereof by about 1/3 of its total width (Col 4, Ln 50-54).

27. Regarding claim 4, Lambuth in Figure 4 discloses a wooden composite I-beam (80) comprising side walls (82,84) that are made from one of plywood (Col 1, Ln 44-46).

28. Regarding claim 5, Lambuth in Figure 4 discloses a wooden composite I-beam (80) comprising side walls (82,84) that are formed from a lesser thickness ($t_{sub i}$) material than the material of the flanges ($w_{sub f}$).

29. Regarding claim 6, Lambuth does not disclose a core that comprises a plurality of layers of corrugated paper or cardboard which are each coated in a suitable adhesive and laminated together. However, Grigsby et al. in Figure 1 teaches a central cavity comprising a core (a) that comprises a plurality of layers of corrugated paper or cardboard (12) which are each coated in a suitable adhesive and laminated together (Col 6, Ln 16-19). Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the applicant's invention to modify the wooden composite beam of Lambuth to include a core that comprises a plurality of layers of corrugated paper or cardboard which are each coated in a suitable adhesive and laminated

together to provide further stiffness for the member using light-weight material as taught by Grigsby (Col 6, Ln 37-50).

30. Regarding claim 7, Lambuth does not disclose the corrugations in the different layers of the core all run in the same direction. However, Grigsby et al. in Figure 1 teaches a central cavity comprising corrugations (12) in the different layers of the core all running in the same direction. Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the applicant's invention to modify the wooden composite beam of Lambuth to include a core that comprises a plurality of layers of corrugated paper or cardboard which the corrugations in the different layers of the core all run in the same direction to provide further stiffness for the member using light-weight material as taught by Grigsby (Col 6, Ln 37-50).

31. Regarding claim 8, Lambuth does not disclose the corrugations in adjacent layers of the core are normal to each other. However, Grigsby et al. in Figures 14 and 15 discloses a central cavity comprising corrugations (254, 256) in adjacent layers of the core are normal to each other. Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the applicant's invention to modify the wooden composite beam of Lambuth to include a core that comprises a plurality of layers of corrugated paper or cardboard which the corrugations in adjacent layers of the core are normal to each other to provide further resistance in deflection as taught by Grigsby (Col 15, Ln 19-20).

32. Regarding claim 10, Lambuth in Figure 4 discloses a wooden composite I-beam (80) comprising the wood grain in the outer veneer of the plywood flanges (86,88) that extends longitudinally of the beam (d sub f), (Col 1, Ln 61-64).

31. Regarding claim 11, Lambuth in Figure 4 discloses a wooden composite I-beam (80) comprising a transverse width (w sub c) of the cavity (a) within the web is between 20-35% of the width of the flanges and typically 25-35%.

32. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambuth ('459) in view of Grigsby et al. ('641) as applied to claim 6 above, and further in view of Angenendt (U.S. Publication No. 2003/0163972 A1).

33. Regarding claim 9, Lambuth, modified by Grigsby et al., discloses the limitations as discussed above but does not disclose the corrugations in one layer are smaller in dimensions than the corrugations in an adjacent layer. However, Angenendt in Figure 1 teaches a construction board with a core (2) having corrugations in one layer (2b, 2c) that are smaller in dimensions than the corrugations in an adjacent layer (2a).

Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the applicant's invention to modify the I-beam of Lambuth already modified by Grigsby et al., to include a core having corrugations in one layer that are smaller in dimensions than the corrugations in an adjacent layer to equalize bowing upon loading (Page 1, Par 0018) as taught by Angenendt.

34. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambuth ('459) in view of Grigsby et al. ('641) as applied to claim 2 above, and further in view of Pullam (U.S. Patent No. 5,930,968).

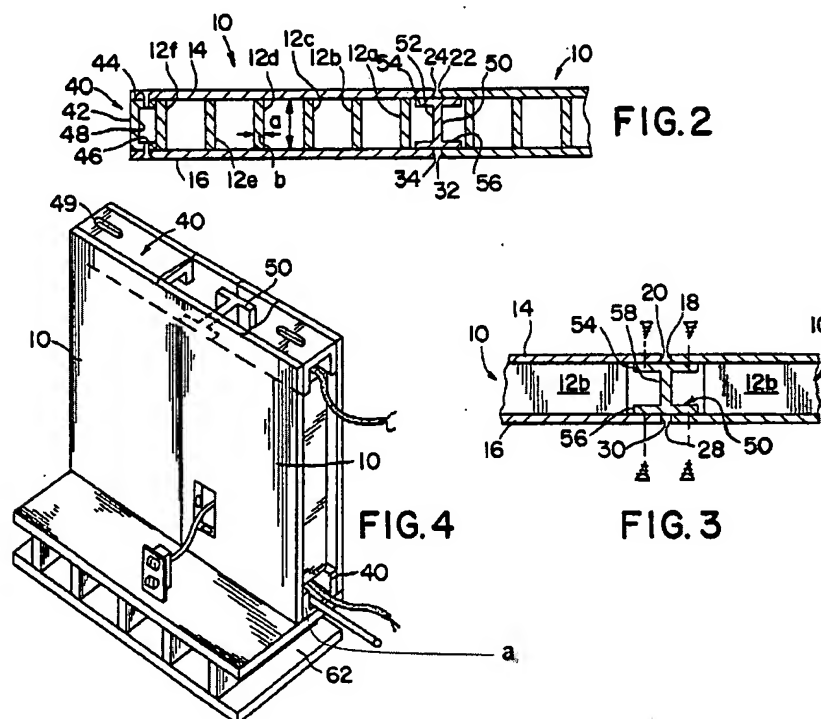
Art Unit: 3637

35. Regarding claim 12, Lambuth, modified by Grigsby et al., discloses the limitations as discussed above but does not disclose a plurality of dowels mounted on the web and spaced longitudinally along its length. However, Pullam in Figures 1,2, and 5 teaches an I-beam (14) further including a plurality of dowels (42) mounted on the web (30) and spaced longitudinally along its length. Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the applicant's invention to modify the I beam of Lambuth already modified by Grigsby et al., to include a plurality of dowels mounted on the web and spaced longitudinally along its length to increase the structural integrity of the beam when used in a framing system by securing it to adjacent elements (Col 5, Ln 26-50) as taught by Pullam.

36. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambuth ('459) in view of Grigsby et al. ('641) as applied to claim 2 above, and further in view of Wright (U.S. Patent No. 4,896,469).

37. Regarding claim 13, Lambuth, modified by Grigsby et al., discloses the limitations as discussed above but does not disclose a building panel having a rectangular frame with both faces covered in board material, the frame comprising top and bottom rails which are joined together by a plurality of spaced apart wood composite I-beams as claimed in claim 2 extending there between. However, Wright in Figures 2 and 4 teaches a building panel (10) having a rectangular frame with both faces (14,16) covered in board material, the frame comprising top and bottom rails (40,a) which are joined together by a plurality of spaced apart wood composite I-beams (50). Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the

applicant's invention to modify the I-beam of Lambuth already modified by Grigsby et al., by using it in a building panel having a rectangular frame with both faces covered in board material, the frame comprising top and bottom rails which are joined together by a plurality of spaced apart wood composite as taught by Wright to construct a light-weight building panel.



Wright (U.S. Patent No. 4,896,469)

38. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambuth ('459) in view of Grigsby et al. ('641) and Pullam ('968) as applied to claim 12 above, and further in view of Wright ('469).

39. Regarding claim 14, Lambuth, modified by Grigsby et al. and Pullam, discloses the limitations as discussed above but does not disclose a building panel having a

rectangular frame with both faces covered in board material, the frame comprising top and bottom rails which are joined together by a plurality of spaced apart wood composite beams extending there between, the outer beams being beams in accordance with claim 12. However, Wright in Figures 2 and 4 teaches a building panel (10) having a rectangular frame with both faces (14,16) covered in board material, the frame comprising top and bottom rails (40,a) which are joined together by a plurality of spaced apart wood composite I-beams (50). Therefore, it would have been obvious to a person having ordinary skill in the arts at the time of the applicant's invention to modify the I beam of Lambuth already modified by Grigsby et al. and Pullam, to be included as the outer beams in a building panel having a rectangular frame with both faces covered in board material, the frame comprising top and bottom rails which are joined together by a plurality of spaced apart wood composite as taught by Wright to construct a light-weight building panel where the outer beams can be attached to other adjacent panels when used in a multi-panel system.

Conclusion

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bergeron (U.S. Patent No. 5,653,080) a composite beam with two webs forming a cavity; Lines (U.S. Patent No. 4,967,534) a composite I-beam with multiple flange sizes; Strickland (U.S. Patent No. 4,333,289) a support structure with dowels aligned along its length; Pugh (U.S. Patent No. 3,634,990) a composite I-beam with central cavity; Ballard (U.S. Patent No. 4,580,380) a composite beam with filled

interior; Romanoff (U.S. Patent No. 1,955,833), a building material made of multiple plies of corrugated cardboard.

41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine T. Cajilig whose telephone number is (571) 272-8143. The examiner can normally be reached on Monday - Friday from 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on (571) 272-6867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CTC 
June 19, 2006

LANNA MAI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

